

Bellwork: 4/9/13

Solve the following rational equation. Don't forget your restrictions!

$$\frac{5x}{x^2-x-6} - \frac{3(x+2)}{x-3} = \frac{x(x-3)}{x+2}$$

$(x-3)(x+2) \mid (x-3) \mid (x+2)$   
 $5x - 3(x+2) = x(x-3)$   
 $5x - 3x - 6 = x^2 - 3x$   
 $2x - 6 = x^2 - 3x$   
 $-2x + 6 = -x^2 + 3x$   
 $0 = x^2 - 5x + 6$

LCD:  $(x-3)(x+2)$   
 Res:  $x-3=0$   $x+2=0$   
 $x \neq 3$   $x \neq -2$

$(x-3)(x-2)=0$   
 $x \neq 3, 2$   
 $x=2$

ALGEBRA 2  
8.6 WORKSHEET #2

NAME \_\_\_\_\_  
PERIOD \_\_\_\_\_

For each of the following equations, find the restricted values, if any. Then solve the equation using the LCD or Cross Multiplication.

1)  $\frac{5x}{4} + \frac{1}{2} = \frac{x}{1} - \frac{1}{2}$  LCD:  $2 \cdot 2 = 4$  no restrictions

$$\frac{5x}{4} + \frac{1 \cdot 2}{2 \cdot 2} = \frac{x \cdot 4}{1 \cdot 4} - \frac{1 \cdot 2}{2 \cdot 2}$$

$$\begin{array}{r} 5x + 2 = 4x - 2 \\ -4x \quad -4x \\ \hline x + 2 = -2 \\ -2 \quad -2 \\ \hline x = -4 \end{array}$$

5)  $\frac{6}{x} - \frac{2}{x+3} = \frac{3(x+5)}{x(x+3)}$  LCD:  $x(x+3)$   
Ans:  $x=0$   $x+3=0$   
 $x \neq 0, -3$

$$\frac{6(x+3)}{x(x+3)} - \frac{2x}{(x+3)x} = \frac{3(x+5)}{x(x+3)}$$

$$6x + 18 - 2x = 3x + 15$$

$$\begin{array}{r} 4x + 18 = 3x + 15 \\ -3x \quad -3x \\ \hline \end{array}$$

$$\begin{array}{r} x + 18 = 15 \\ -18 \quad -18 \\ \hline \end{array} \quad x = -3$$

no solution

Homework: 4/9/13

p. 8 - #7 - 12

